COMPOST AND MULCH: Nurturing Soil Health

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Welcome To Sonoma Compost Company

Recycling Organics Since 1985

Sonoma Compost Company
- Welcome
- Regional Compost Program
- School Garden Program
- Municipal Consulting
- Contact Us

Our Products
- Products / Pricing
- Biochar
- Application
- Delivery
- Recycled Wood Products

Why Use Sonoma Compost
- Soil Improvement
- Environmental Benefits
- Yes, We're Organic!

Sonoma Compost in Use
- Agriculture
- Landscaping
- Backyard Gardening
- Erosion Control

Compost Forum
- Ask the Experts
- Helpful Hints

News Department
- Research Projects
- Changes at SCC

Contact Information

550 Mecham Rd, Petaluma, CA
Tel: 707 664 9113 Fax:707 664 1943
Hours: Monday-Saturday 7:00 am to 3:00 pm
Both for sales and drop-off
A drop-off charge for wood/yard debris applies

Holiday Season:
Retail closed Friday December 19 from 12:00 pm
Drop-off closed Thursday December 25
and Thursday January 1
Retail closed December 24 at noon
through January 4

A Gift Idea

Looking for the perfect thank you gift for your gardening friend? Consider a Sonoma Compost logo coffee mug, complete with a Rumi quote providing green advice for everyone. Tucked inside is a bag of tasty , fresh walnuts, grown by our own Alan. Limited quantity. Available now for only $15.00.

(click on image for larger view)

Presentations

Sonoma Compost does presentations about on-site composting, the benefits of compost to soils, the role of compost in IPM, etc. For those who attend the presentations I leave a copy of the most recent presentation here. If you have not had a chance to attend one of the talks, it will give you a sense of what will be discussed.

Lawn Conversion: A Tool To Live With Drought

UN Resolution Year of Soil

Recognizing the economic and social significance of good land management, including soil, particularly its contribution to economic growth, biodiversity, sustainable agriculture and food security, eradicating poverty, women's empowerment, addressing climate change and **improving water availability**, and **stressing that desertification, land degradation and drought are challenges of a global dimension** and that they continue to pose serious challenges to the sustainable development of all countries, in particular developing countries

http://www.fao.org/fileadmin/user_upload/GSP/docs/iys/World_Soil_Day_and_International_Year_of_Soils__UNGA_Resolution_Dec._2013.pdf

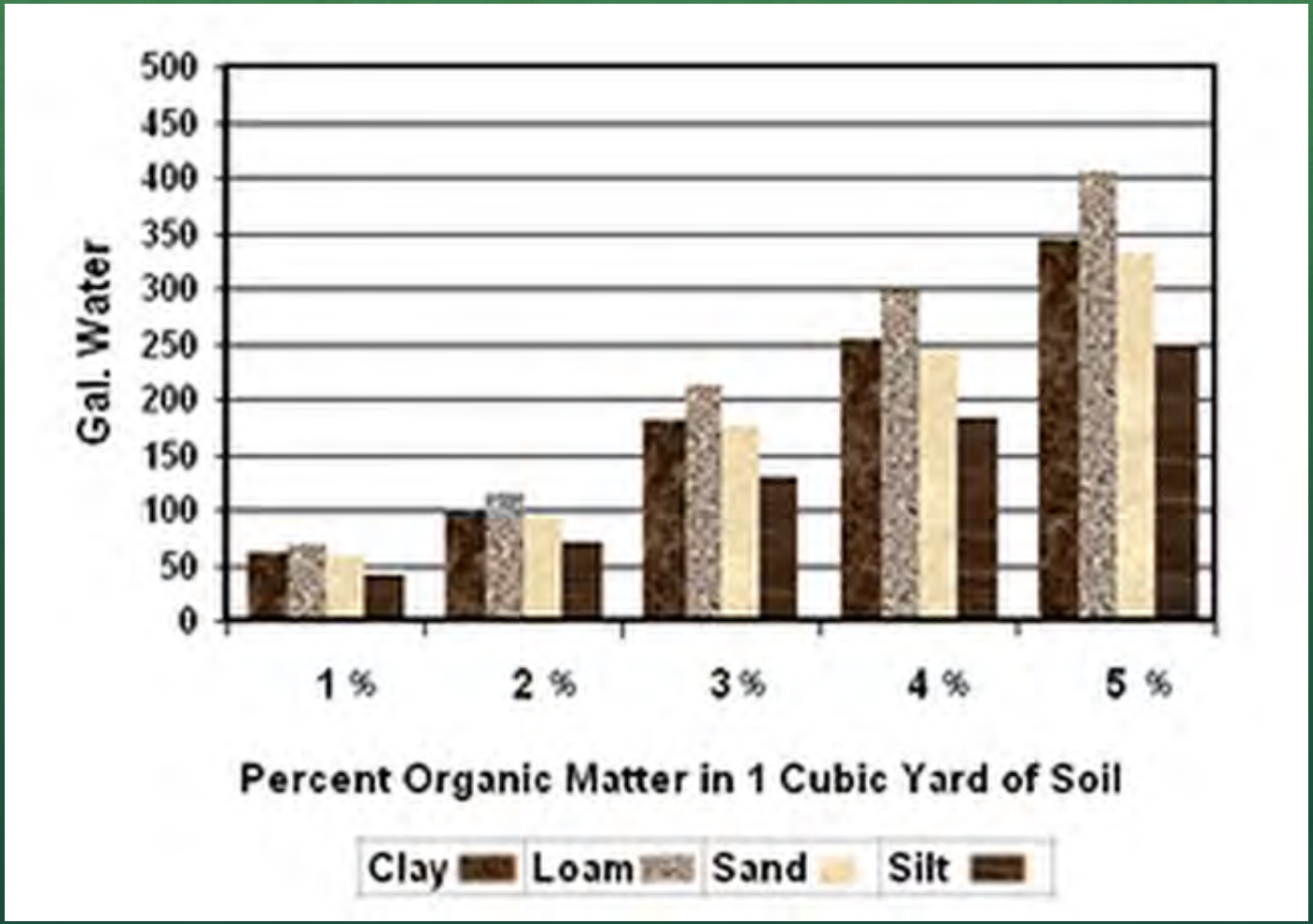
From Gov. Brown Budget

Healthy Soils—As the leading agricultural state in the nation, it is important for California's soils to be sustainable and resilient to climate change. Increased carbon in soils is responsible for numerous benefits **including increased water holding capacity**, *increased crop yields* and decreased sediment erosion. In the upcoming year, the Administration will work on several new initiatives to increase carbon in soil and establish long term goals for carbon levels in all California's agricultural soils.
CDFA will coordinate this initiative under its existing authority provided by the Environmental Farming Act.

Focus on Water Conservation

- 4 inch layer of mulch can save 130,000 gallons of water/acre in vineyards
- Water holding capacity increased by 40%
- 49% greater water holding capacity in a soil with sod amended with 25% compost
- Marin Carbon Project ½ inch compost one time 2600 gallons/acre

Water Holding Capacity



From:http://www.denverwater.org

Feed the Soil Not the Dump

- 50-70K tons of food scraps landfilled per year
- Almost 100,000 TPY (300 TPD) of yard debris and wood turned into compost and mulches
- Almost 1,700,000 tons converted into compost and mulch

Environmental Impacts

25% of our agricultural water is used for food that is never consumed

Soil Health

Manage the soil to perpetuate as a living system that:

- promotes a resilient population of soil organisms
- has a symbiotic relationship with plant roots
- is in balance with plant pathogens , insect and weed infestations
- recycles, conserves and fix nutrients
- provides good soil structure to maximize root penetration
- improves soil water management
- ‘maximizes’ crop production

The Role of Organic Matter in Soil: Promote Soil Health

- Soil Structure
- Nutrient management
- Conservation of soil
- Soil moisture management
- Diversity of Microorganisms

Compost

- In the Soil/On Top
- Supplies Nutrients
- Improves Soil Structure
- Conserves Water
- Improves CEC
- Provides Erosion Control

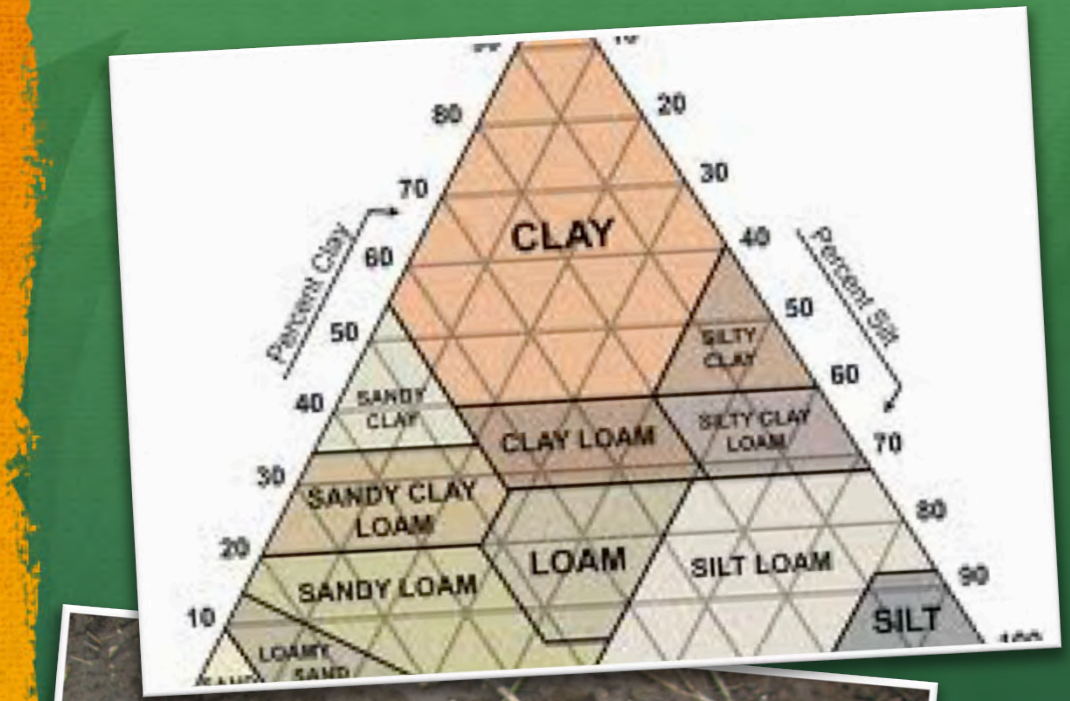
Mulch

- On Top of the Soil
- Slow Nutrient Input
- Improves Soil Structure
- Conserves Water
- No CEC Change
- Provides Erosion Control

Soil Structure

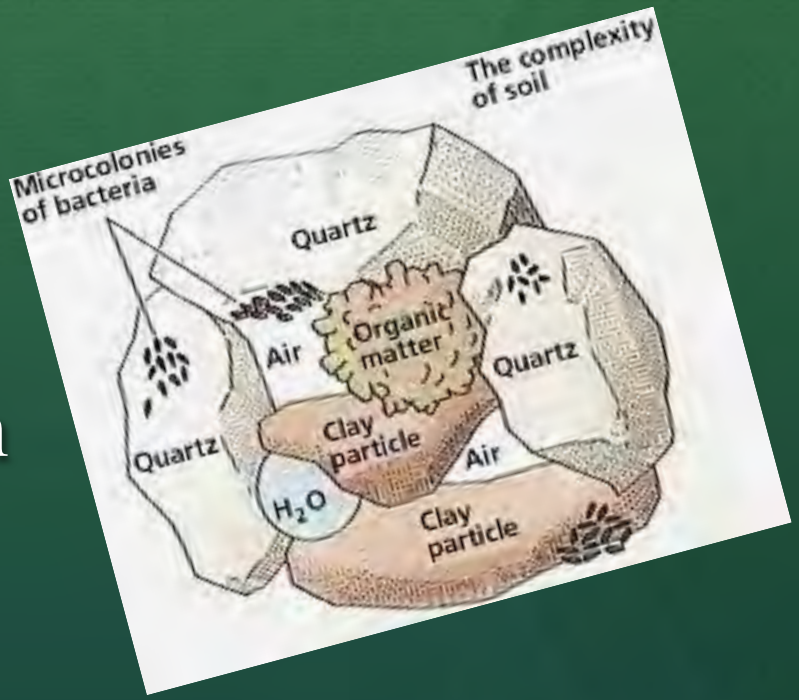
Can't change texture. What does soil structure do?

Affects water infiltration rate and water holding capacity, enhances root penetration, optimizes soil aeration, stimulates microbial diversity



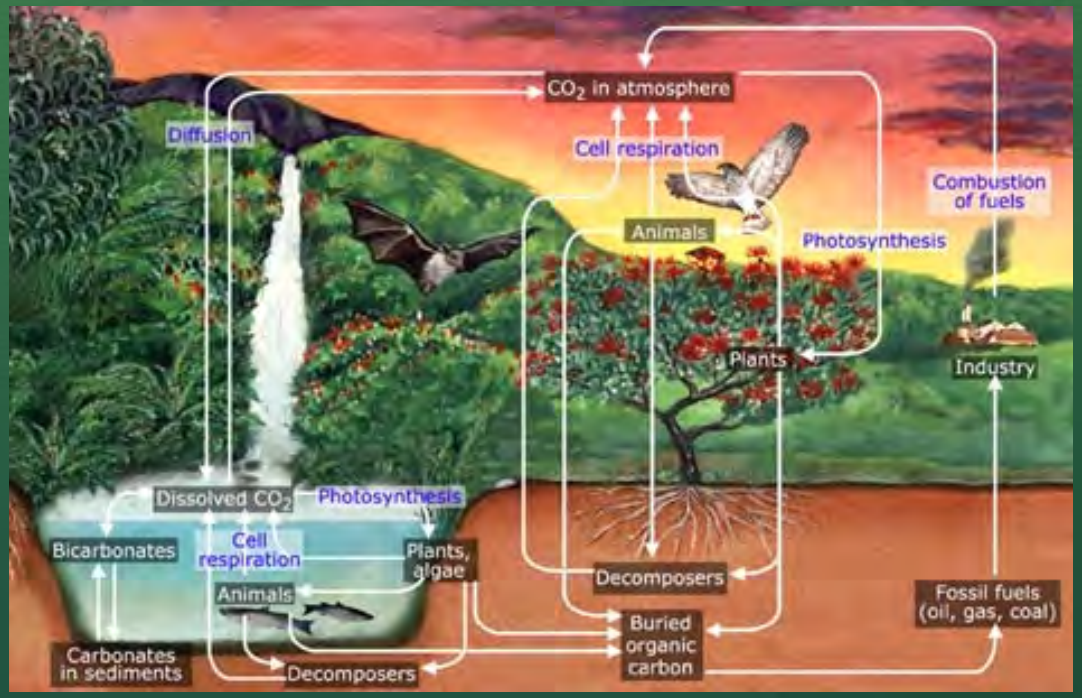
Soil Aggregation

- Tilth, Friability, Soil Structure
- Aggregation Formation
- Soil Aeration
- Root Penetration
- Aggregation Destruction



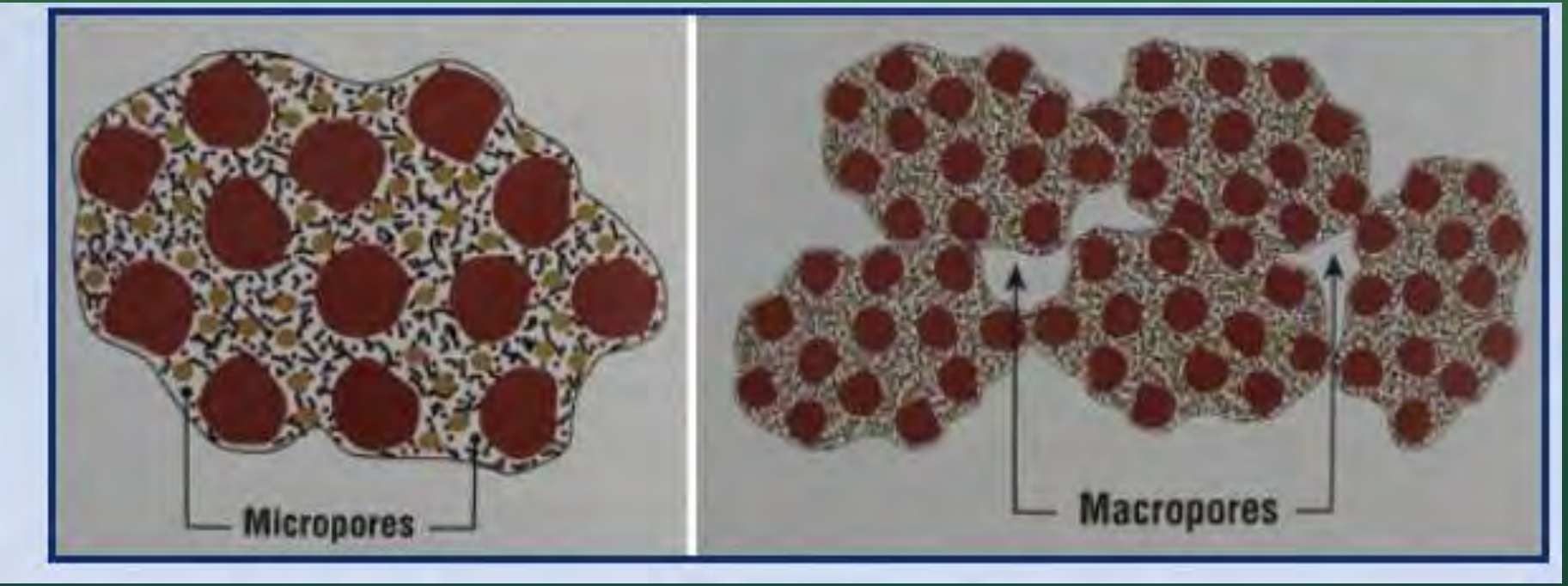
Nutrient Management

- Increase CEC
- Immobilize Water Soluble Nutrients
- Long Term Nutrient Release
- Nitrogen Fixing Micoorganisms

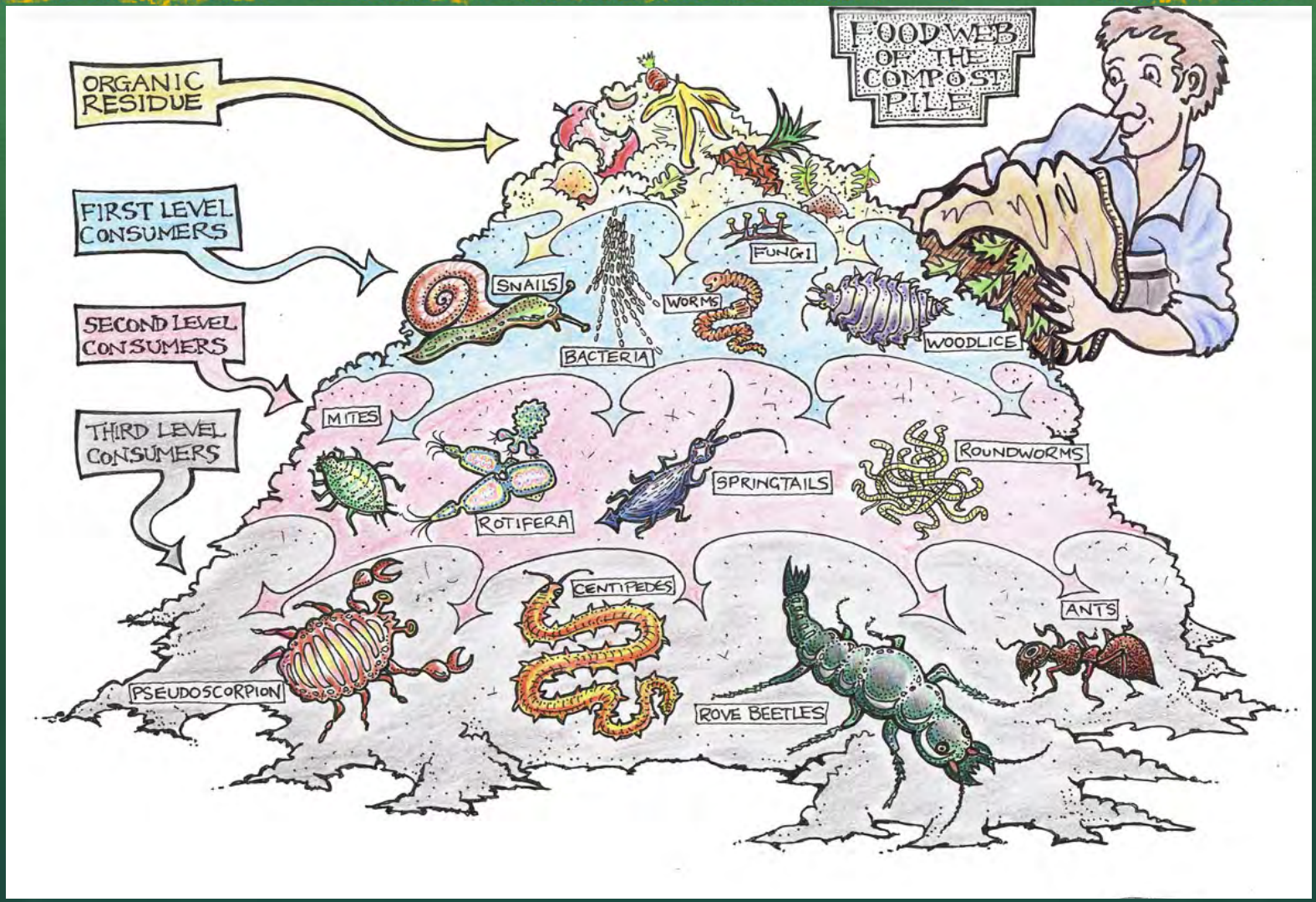


Soil Moisture Management

- Increased Water Holding Capacity (Sandy)
- Increased Water Permeability (Clay)



Diversity of Soil Microorganisms



Diversity of Soil Microorganisms

- A Tool in IPM
  - Mycorrhizae
  - Increased Competition/Predation
  - Site Occupation
  - Nutrient Management
  - Fungal Presence for Aggregation

Compost & Mulch

Hierarchy of Organics Management

- Reduce: Lawn conversion, plant right, buy right
- Reuse: recycled lumber, reuse nursery
- Recycle: Compost/ Mulch
  - On-site
  - Centralized

The Composting Process

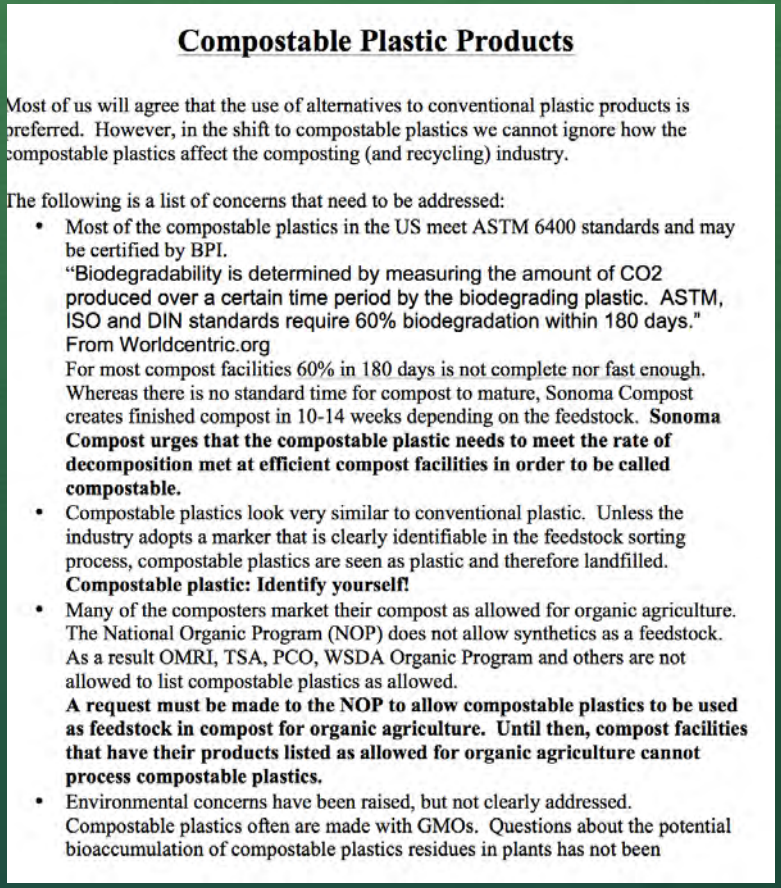
- A biological process
- Food
- Water 40-60 %
- Oxygen/Porosity (Aerobic)
- Time

Don't use

- Human Feces
- Cat/dog Feces
- Large Pieces of Wood
- Diseased Plant Material
- Large Quantity of Grease or Oil
- Persistent Pesticides
- Toxins
- Compostable plastics

Compostable Plastics

- Many Do Not Decompose
- Identification
- NOP: synthetic
- GMO, Oil Derived
- Recycle
- Increase Food Diversion



Compostable Plastic Products

Most of us will agree that the use of alternatives to conventional plastic products is preferred. However, in the shift to compostable plastics we cannot ignore how the compostable plastics affect the composting (and recycling) industry.

The following is a list of concerns that need to be addressed:

- Most of the compostable plastics in the US meet ASTM 6400 standards and may be certified by BPI.
  "Biodegradability is determined by measuring the amount of CO2 produced over a certain time period by the biodegrading plastic. ASTM, ISO and DIN standards require 60% biodegradation within 180 days." From Worldcentric.org
  For most compost facilities 60% in 180 days is not complete nor fast enough. Whereas there is no standard time for compost to mature, Sonoma Compost creates finished compost in 10-14 weeks depending on the feedstock. **Sonoma Compost urges that the compostable plastic needs to meet the rate of decomposition met at efficient compost facilities in order to be called compostable.**
- Compostable plastics look very similar to conventional plastic. Unless the industry adopts a marker that is clearly identifiable in the feedstock sorting process, compostable plastics are seen as plastic and therefore landfilled. **Compostable plastic: Identify yourself!**
- Many of the composters market their compost as allowed for organic agriculture. The National Organic Program (NOP) does not allow synthetics as a feedstock. As a result OMRI, TSA, PCO, WSDA Organic Program and others are not allowed to list compostable plastics as allowed.
  A request must be made to the NOP to allow compostable plastics to be used as feedstock in compost for organic agriculture. Until then, compost facilities that have their products listed as allowed for organic agriculture cannot process compostable plastics.
- Environmental concerns have been raised, but not clearly addressed. Compostable plastics often are made with GMOs. Questions about the potential bioaccumulation of compostable plastics residues in plants has not been


• Particle size
• Water

Water, water, water

Moisture By Feel

Squeeze a handful of compost

- > 60% Water drips out
- 55-60% Sheen on surface
- 50-55% Ball stays when tapped
- 45-50% Ball falls apart when tapped
- 40-45% No ball forms
- < 40% Hand feels dusty dry

Sonoma Compost Site: water loss

Temperature Monitoring

- Evaluate the Health of the Pile
  - Evaluating the Temperature
  - Size of Pile
  - Particle Size
  - Food Composition
  - Moisture by Feel


REOTEMP
°F
0
20
40
60
80
100
120
140
160
180
200

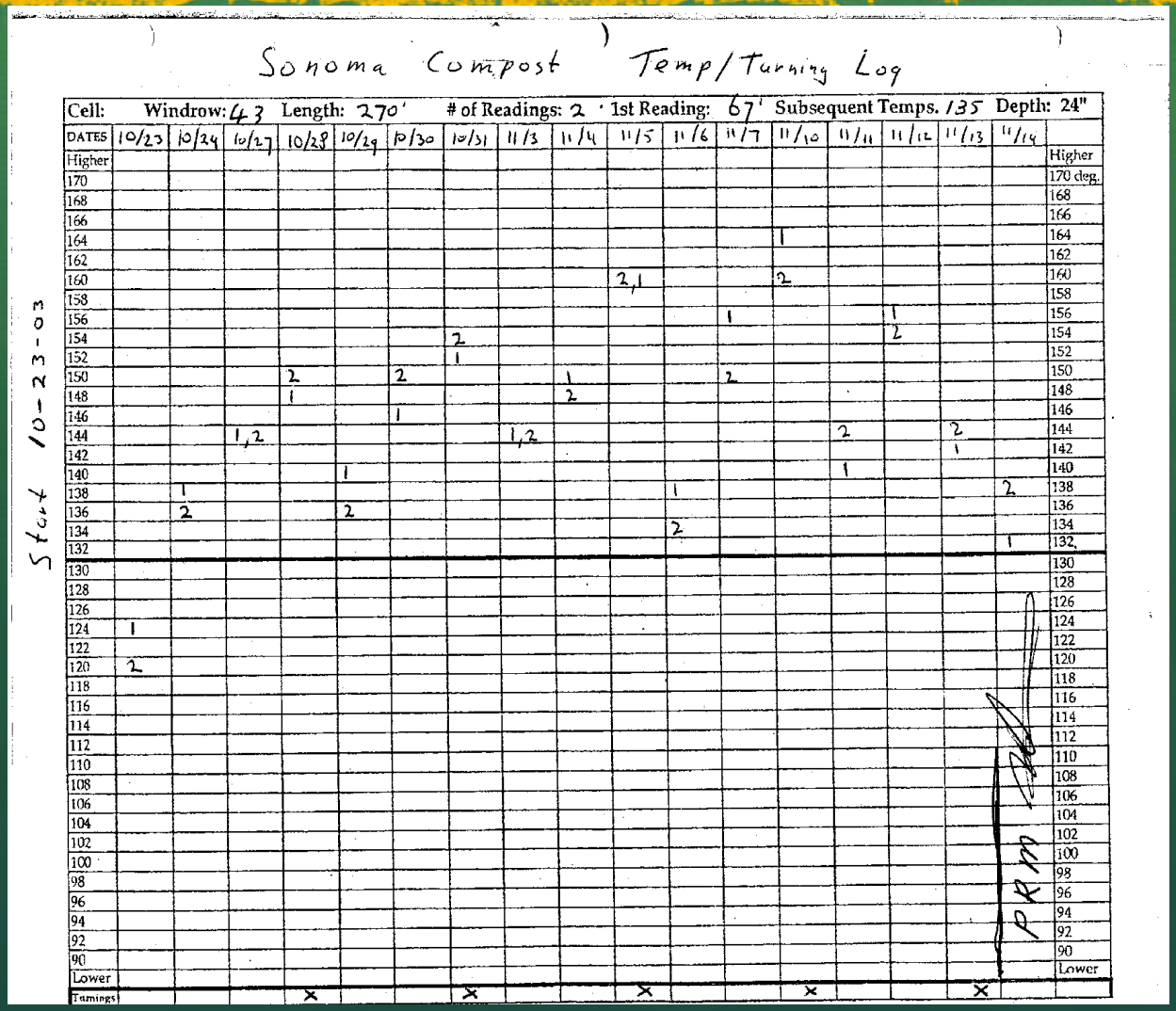
LOS ANGELES

Indoor compost pile ignites house

A 1,700-plant marijuana grow house in the San Gabriel area erupted in flames when a living room compost pile ignited Monday.

Detective David Mertens said a man was seen running from the home but there are no arrests. Mertens says gangs rent out homes to raise pot and investigators find a couple of similar marijuana grow houses each month.

Temperature/Turning Log



Sonoma Compost Temp/Turning Log

Cell: Windrow: 43 Length: 270' # of Readings: 2 1st Reading: 67' Subsequent Temps. 135 Depth: 24"

Start 10-23-03

DATES	10/23	10/24	10/27	10/28	10/29	10/30	10/31	11/3	11/4	11/5	11/6	11/7	11/10	11/11	11/12	11/13	11/14	
Higher																		Higher
170																		170 deg.
168																		168
166																		166
164													1					164
162																		162
160										2,1			2					160
158																		158
156												1			1			156
154							2								2			154
152							1											152
150				2		2			1			2						150
148				1					2									148
146						1												146
144			1,2					1,2						2		2		144
142																1		142
140					1									1				140
138		1									1						2	138
136		2			2													136
134											2							134
132																	1	132
130																		130
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102																		102
100																		100
98																		98
96																		96
94																		94
92																		92
90																		90
Lower																		Lower
Turnings				X			X			X			X			X		

PRM

Or, use the pitch fork

Meeting Quality Standards

- Compost (and mulch) will be meeting these standards:
  - Will be kept at a temperature of at least 131 degrees Fahrenheit for at least 15 days during which time the piles will be turned at least 5 times.
  - Fecal coliform tested state certified shall be less than 1000 MPN/dgr, and salmonella sp. shall be less than 3 per 4 dgr.
  - Metal Concentrations (stricter Demeter)
  - Pesticides

Metal Concentrations

Maximum Acceptable Metal Concentrations

Constituent	Concentration (mg/kg) on dry weight basis
Arsenic (As)	41
Cadmium (Cd)	39
Chromium (Cr)	1200
Copper (Cu)	1500
Lead (Pb)	300
Mercury (Hg)	17
Nickel (Ni)	420
Selenium (Se)	36
Zinc (Zn)	2800

	LOW NITROGEN REQUIRING PLANTS	HIGH NITROGEN REQUIRING PLANTS
WELL DRAINED	SONOMA COMPOST	ORGANIC HI-TEST COMPOST
POORLY DRAINED	TERRA LITE	MALLARD PLUS

OMRI/CDFA Listed

Sonoma Compost

0.9-0.4-0.7

Guaranteed Analysis:
Total Nitrogen (N) 0.9 %
0.05 % Water Soluble Nitrogen
0.85 %Water Insoluble Nitrogen
Available Phosphate (P_2O_5) 0.4 %
Soluble Potash (K2O) 0.7 %

Derived from: Compost (Yard Debris with Vegetative Food Scraps)

Directions for use: Incorporate into the soil

Company: Sonoma Compost Co.
550 Meacham Rd.
Petaluma, CA 94952

Net Weight: _____

SONOMA COMPOST IS OMRI® Listed
ORGANIC MATERIALS REVIEW INSTITUTE

REGISTERED cdfa ORGANIC INPUT MATERIAL

Organic Hi-Test Compost

1.2-0.3-0.6

Directions for use: Incorporate into the soil. Use as soil amendment to for vegetable production, lawns or other nitrogen loving plants.

Guaranteed Analysis:
Total Nitrogen (N) 1.2 %
0.1 % Water Soluble Nitrogen
1.1 % Water Insoluble Nitrogen
Available Phosphate (P2O5) 0.3 %
Soluble Potash (K2O) 0.6 %

Derived from: Compost (Yard Debris with Vegetative Food Scraps, Chicken Feathers)

Company: Sonoma Compost Co.
550 Meacham Rd.
Petaluma, CA 94952

Net Weight: _____

SONOMA COMPOST IS OMRI® Listed
ORGANIC MATERIALS REVIEW INSTITUTE

REGISTERED cdfa ORGANIC INPUT MATERIAL

Parameters for finished compost

- Parent material not recognizable
- Humus formation (dark stain)
- C/N ratio <20
- Mature and stable: Seed Germination & CO_2
- pH <8

Mulches

- Aesthetics
- pH
- Coarse to last, resist blowing away
- High C for weed suppression, aggregation
- Water conservation
- Temperature moderation
- Slowly build soil
- Lazy soil preparation (fall)

Thank you
Questions?

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